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Substitute Sequence Listing

GAY 1655
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Seq. 5/16/01
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Jan Vijg

Serial No.: 09/306,333

Group Art Unit: 1655

Filed: May 6, 1999

Examiner: Souaya, J.

For: BRCA1 and hMLH1 Gene Primer Sequences And Method For Testing

Sequence Listing Disc



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SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Vijg, Jan
(ii) TITLE OF INVENTION: BRCA1 And hMLH1 Gene Primer Sequences And Method For Testing

(iii) NUMBER OF SEQUENCES: 122

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Rines & Rines

(B) STREET: 81 North State Street

(C) CITY: Concord

(D) STATE: NH

(E) COUNTRY: USA

(F) ZIP: 03301

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Diskette, 3.50 inch

(B) COMPUTER: IBM PC

(C) OPERATING SYSTEM: MS-DOS

(D) SOFTWARE: Microsoft Wordpad

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: 09/306,333

(B) FILING DATE: 06-MAY-1999

(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA: None

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Rines, Robert H.

(B) REGISTRATION NUMBER: 15,932

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (603) 228-0121

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(2) INFORMATION FOR SEQ ID NO: 1

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 3

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1

GCGGCTAAGC TACAGCTGAA GGAAGAACGT GA

(3) INFORMATION FOR SEQ ID NO: 2

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2
GGCGAGACAG GATTACTCTG AGACCTAGGC CC

32

(4) INFORMATION FOR SEQ ID NO: 3
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 35 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3
GCGCCCCTTG GGATTAGTAT CTATCTCTCT ACTGG

35

(5) INFORMATION FOR SEQ ID NO: 4
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4
GCGCTCATCT CTTTCAAAGA GGAGAGCCTG

30

(6) INFORMATION FOR SEQ ID NO: 5
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5

CGGCTTTTTC TCCCCCTCCC ACTATCTAAG G

(7) INFORMATION FOR SEQ ID NO: 6

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 3

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6

GGGTAGTAA AGGAAGAGGA GCTTGCCC

(8) INFORMATION FOR SEQ ID NO: 7

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 3

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7

GGTGCTTTGG TCAATGAAGT GGGGTTGGTA G

(9) INFORMATION FOR SEQ ID NO: 8

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 3

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8

GCGCGCGTAT GTTGGTACAC TTTGTATATC ACAC

(10) INFORMATION FOR SEQ ID NO: 9

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9

TTTTTTTTTT TTTAATACA

19

(11) INFORMATION FOR SEQ ID NO: 10
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10

AATCTGTACG AACCATCT

18

(12) INFORMATION FOR SEQ ID NO: 11
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11

TGGAAGTAGT GATAAGGT

18

(13) INFORMATION FOR SEQ ID NO: 12
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12
TGTACTTTTC CCAAAAGG

18

(14) INFORMATION FOR SEQ ID NO: 13
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13
ATCTGCACTT CTTTTCT

18

(15) INFORMATION FOR SEQ ID NO: 14
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14
AAACCTTG CAGTTGAG

18

(16) INFORMATION FOR SEQ ID NO: 15
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15
TACTTACCTG TTTTTTGG

18

(17) INFORMATION FOR SEQ ID NO: 16
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16
GTAGTAGCTC TGCTTGTT

18

(18) INFORMATION FOR SEQ ID NO: 17
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17
CAGCTTTTCC TTAAAGTC

18

(19) INFORMATION FOR SEQ ID NO: 18
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18
CAGTTGAAAT GTCAGAAG

18

(20) INFORMATION FOR SEQ ID NO: 19
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19
CTTGCTCCTT CATGTTCTTG

18

(21) INFORMATION FOR SEQ ID NO: 20
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20
AGAAGTATAA GAATGGCTGT C

21

(22) INFORMATION FOR SEQ ID NO: 21
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21
ATTATTTCTT GTTCCCTT

18

(23) INFORMATION FOR SEQ ID NO: 22
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22

18

AATGCTTAGT ATCTGCCT
(24) INFORMATION FOR SEQ ID NO: 23
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23

20

CCTATTTTGA GGTATTGAAT
(25) INFORMATION FOR SEQ ID NO: 24
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 17 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24

17

GCCAGTGTGC ATCACCA
(26) INFORMATION FOR SEQ ID NO: 25
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25
TGTTGGGATG CAAACAGG
(27) INFORMATION FOR SEQ ID NO: 26

18

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 3
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26
ATCCCACAGT GCATAAAT

18

(28) INFORMATION FOR SEQ ID NO: 27
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 50 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT:
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27
CGCCCGCCGC CGCCCGCCGC GCCCGCGCC CGTCCCGCCG CCCCCGCCCG

50

(29) INFORMATION FOR SEQ ID NO: 28
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 45 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE: Synthetic
(vii) IMMEDIATE SOURCE: Synthetic
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28
CGCCCGCCGC GCCCGCGCC CGTCCCGCCG CCCCCGCCCG GCCCG

45

(30) INFORMATION FOR SEQ ID NO: 29
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 40 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE: Synthetic
(vii) IMMEDIATE SOURCE: Synthetic

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29
CGCCCCGCCGC GCCCGCGCC CGGCCCGCCG CCCCCGCCCG

40

(31) INFORMATION FOR SEQ ID NO: 30

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE: Synthetic

(vii) IMMEDIATE SOURCE: Synthetic

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30
CGTCCCGC

8

(32) INFORMATION FOR SEQ ID NO: 31

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE: Synthetic

(vii) IMMEDIATE SOURCE: Synthetic

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31
GCGCG

5

(33) INFORMATION FOR SEQ ID NO: 32

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Synthetic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE: Synthetic

(vii) IMMEDIATE SOURCE: Synthetic

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32
CG

2

(34) INFORMATION FOR SEQ ID NO: 33

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 38 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33

TGTACCTTGA TTTCGTATTC TGAGAGGCTG CTGCTTAG

38

(35) INFORMATION FOR SEQ ID NO: 34

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34

GAGAAAGAAT GAATTGGAGT TGGATTTTCG TTCTCAC

37

(36) INFORMATION FOR SEQ ID NO: 35

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35

TAGCCATGAA AAGATAATCT CACAACCTGCC CTTAAGAAC

39

(37) INFORMATION FOR SEQ ID NO: 36

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36

ACCAGCCTAC TTGAGGGAGG AAGGTGGGAA GA

32

(38) INFORMATION FOR SEQ ID NO: 37

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 44 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: genomic DNA
 (iii) HYPOTHETICAL: no
 (iv) ANTI-SENSE: no
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: human
 (vii) IMMEDIATE SOURCE:
 (A) LIBRARY: genomic
 (viii) POSITION IN GENOME:
 (A) CHROMOSOME/SEGMENT: 17
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37
 GAGAGCAGCT TTCCTAACT AAATAAGATT GGTCAGCTTT CTGT
 (39) INFORMATION FOR SEQ ID NO: 38
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 44 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double stranded
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: genomic DNA
 (iii) HYPOTHETICAL: no
 (iv) ANTI-SENSE: no
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: human
 (vii) IMMEDIATE SOURCE:
 (A) LIBRARY: genomic
 (viii) POSITION IN GENOME:
 (A) CHROMOSOME/SEGMENT: 17
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38
 TCAAGTTTAA GAACGAGTTC CTTTAACTAT ACTTGGAAT TTGT
 (40) INFORMATION FOR SEQ ID NO: 39
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 34 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double stranded
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: genomic DNA
 (iii) HYPOTHETICAL: no
 (iv) ANTI-SENSE: no
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: human
 (vii) IMMEDIATE SOURCE:
 (A) LIBRARY: genomic
 (viii) POSITION IN GENOME:
 (A) CHROMOSOME/SEGMENT: 17
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39
 GCTAGGACGT CATCTTGGC TTGAATGAGC TTAA
 (41) INFORMATION FOR SEQ ID NO: 40
 (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 32 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double stranded
 (D) TOPOLOGY: linear
 (ii) MOLECULE TYPE: genomic DNA
 (iii) HYPOTHETICAL: no
 (iv) ANTI-SENSE: no
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: human

44

44

34

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40

GCGATAATTA CCCATGTGCT GAGCAAGGAT CA

(42) INFORMATION FOR SEQ ID NO: 41

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41

TCTTCAATGT GGAGGCAGTA GGGATGGAGA AA

(43) INFORMATION FOR SEQ ID NO: 42

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42

GGGTCTCCAG GTTTGCCTC ACTTGTCTT TC

(44) INFORMATION FOR SEQ ID NO: 43

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 41 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43

TCTTAACTTC ATATCAGCCT CCCCTAGACT TCCAAATATC C

32

32

32

41

(45) INFORMATION FOR SEQ ID NO: 44

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44

CATCTCTGCA AACCCCACTC CAATACAGCG TG

32

(46) INFORMATION FOR SEQ ID NO: 45

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 38 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45

CACTCTTCCA TCCCAACCAC ATCCCTCAGT ATTGTCTC

38

(47) INFORMATION FOR SEQ ID NO: 46

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 35 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46

GCATCGCCAG AAGTCCTTTT CAGGCTGATG TACAT

35

(48) INFORMATION FOR SEQ ID NO: 47

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47
ACCTTGTTAT TTTTGTATAT TT

22

(49) INFORMATION FOR SEQ ID NO: 48
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48
TTGCTAAGCC AGGCTGTT

18

(50) INFORMATION FOR SEQ ID NO: 49
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49
ATACTCATGC CAGCTCATTA

20

(51) INFORMATION FOR SEQ ID NO: 50
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50

20

AACGTCCAAT ACATCAGCTA

(52) INFORMATION FOR SEQ ID NO: 51

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51

20

CATGCTCAGA GAATCCTAGA

(53) INFORMATION FOR SEQ ID NO: 52

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52

20

CTGTGGCTCA GTAACAAATG

(54) INFORMATION FOR SEQ ID NO: 53

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53

20

TCACTCCAAA TCAGTAGAGA

(55) INFORMATION FOR SEQ ID NO: 54

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54
TACTGCTGCT TATAGGTTCA

20

(56) INFORMATION FOR SEQ ID NO: 55
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55
GAAAGCAGAT TTGGCAGTTC

20

(57) INFORMATION FOR SEQ ID NO: 56
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56
CTGACTGGCA TTTGGTTGTA

20

(58) INFORMATION FOR SEQ ID NO: 57
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57

20

GAATAGGCTG AGGAGGAAGT
(59) INFORMATION FOR SEQ ID NO: 58
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58

20

CTCTTGGAAG GCTAGGATTG
(60) INFORMATION FOR SEQ ID NO: 59
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59

20

ACAGCGATAC TTTCCCAGAG
(61) INFORMATION FOR SEQ ID NO: 60
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic

(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60
TGCCTTCCCT AGAGTGCTAA

20

(62) INFORMATION FOR SEQ ID NO: 61

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61
TTGCAAACTG AAAGATCTGT

20

(63) INFORMATION FOR SEQ ID NO: 62

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62
GCTTTGAAAC CTTGAATGTA

20

(64) INFORMATION FOR SEQ ID NO: 63

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63
GTCGGGAAAC AAGCATCGAA

20

(65) INFORMATION FOR SEQ ID NO: 64

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64
TTGCCTCTGA ACTGAGATGA

20

(66) INFORMATION FOR SEQ ID NO: 65
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65
TAATATCACT GCAGGCTTTC

20

(67) INFORMATION FOR SEQ ID NO: 66
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66
TTCCTCAAAG TTTTCCTCTA

20

(68) INFORMATION FOR SEQ ID NO: 67
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67

20

TCCCATCAAG TCATTGTGA

(69) INFORMATION FOR SEQ ID NO: 68

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68

20

TTGCAGGAAG ACTTTGTTTA

(70) INFORMATION FOR SEQ ID NO: 69

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69

20

TAATGAAGTG GGCTCCAGTA

(71) INFORMATION FOR SEQ ID NO: 70

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70
CTTCCCATAG GCTGTTCTAA

20

(72) INFORMATION FOR SEQ ID NO: 71

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71
GCAAGAATAT GAAGAAGTAG

20

(73) INFORMATION FOR SEQ ID NO: 72

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72
CAAATGTGTA TGGGTGAAAC

20

(74) INFORMATION FOR SEQ ID NO: 73

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73
AGACACCTGA TGACCTGTTA

20

(75) INFORMATION FOR SEQ ID NO: 74

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74

TCTCCTCTGT GTTCTTAGAC

20

(76) INFORMATION FOR SEQ ID NO: 75
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75

CTTTTCACCC ATACACATTT

20

(77) INFORMATION FOR SEQ ID NO: 76
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76

GACTGATGCC TCATTGTTT

20

(78) INFORMATION FOR SEQ ID NO: 77
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77
CTCAGGAACA TCACCTTAGT

20

(79) INFORMATION FOR SEQ ID NO: 78
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78
ATAAATAGAC TGGGCCACAC

20

(80) INFORMATION FOR SEQ ID NO: 79
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79
TATATATGTT TTTCTAATGT GT

22

20
(81) INFORMATION FOR SEQ ID NO: 80
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80
TCCCAAATTA ATAACTCTT

20

(82) INFORMATION FOR SEQ ID NO: 81
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81
GAGCCTCATT TATTTTCT

18

(83) INFORMATION FOR SEQ ID NO: 82
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82
ATTTTTCGTT CTCACCTA

18

(84) INFORMATION FOR SEQ ID NO: 83
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83
TATTTGCCTT TTGAGTAT

18

(85) INFORMATION FOR SEQ ID NO: 84
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84

18

TCTGATGAAT GGTTTTAT

(86) INFORMATION FOR SEQ ID NO: 85

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85

18

ACTTGCTGAG TGTGTTTC

(87) INFORMATION FOR SEQ ID NO: 86

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86

18

GCACTTGAGT TGCATTCT

(88) INFORMATION FOR SEQ ID NO: 87

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87
TACATTTTTC TCTAACTGC

19

(89) INFORMATION FOR SEQ ID NO: 88
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88
GAAGAAAACA AATGGTTTT

19

(90) INFORMATION FOR SEQ ID NO: 89
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89
GGAGGAAAAG CACAGAAC

18

(91) INFORMATION FOR SEQ ID NO: 90
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90
CCAGCAATTA TTATTAAATA CTT

23

(92) INFORMATION FOR SEQ ID NO: 91

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91

18

CAGTCACTGC TCAGTAAA

(93) INFORMATION FOR SEQ ID NO: 92

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92

18

ATTACCAGCT TCATAGAC

(94) INFORMATION FOR SEQ ID NO: 93

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93

18

CTGCATACAT CTAAC TAG

(95) INFORMATION FOR SEQ ID NO: 94

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94

CTACCCACTC TCTTTTCA

18

(96) INFORMATION FOR SEQ ID NO: 95
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95

AGTTGCAGCG TTTATAGT

18

(97) INFORMATION FOR SEQ ID NO: 96
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96

CAGCAAACCT AAGAATGT

18

(98) INFORMATION FOR SEQ ID NO: 97
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:

(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97

GCTTCTCAA GTATTCA

18

(99) INFORMATION FOR SEQ ID NO: 98

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:

(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98

AGTGTTTGGC CAACAATA

18

(100) INFORMATION FOR SEQ ID NO: 99

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:

(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99

CCAATTTGTG TATCATAG

18

(101) INFORMATION FOR SEQ ID NO: 100

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:

(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100

AGTGTATAAA TGCCTGTA

(102) INFORMATION FOR SEQ ID NO: 101

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101

20

TGGTTTTCTC CTTCCATTTA

(103) INFORMATION FOR SEQ ID NO: 102

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102

20

TGTTCCAATA CAGCAGATGA

(104) INFORMATION FOR SEQ ID NO: 103

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103

20

CGTTGTGTAA ATTAACTTC

(105) INFORMATION FOR SEQ ID NO: 104

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104
AGTCATTAGG GAGATACATA

20

(106) INFORMATION FOR SEQ ID NO: 105
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105
TGTGCTAGAG GTAACCTCA

18

(107) INFORMATION FOR SEQ ID NO: 106
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106
CTCATGTGGT TTTATGCA

18

(108) INFORMATION FOR SEQ ID NO: 107
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107

19

TTTCAACTTC TAATCCTTT

(109) INFORMATION FOR SEQ ID NO: 108

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108

19

GGAGAAATAG TATTATACT

(110) INFORMATION FOR SEQ ID NO: 109

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109

18

GTTCTTCTGC TGTATGTA

(111) INFORMATION FOR SEQ ID NO: 110

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110

18

CTGAATGTTT ATCTCTGG

(112) INFORMATION FOR SEQ ID NO: 111

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111

CTCTTTCTCT TATCCTGAT

19

(113) INFORMATION FOR SEQ ID NO: 112

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112

TGGTGGGGTG AGATTTT

18

(114) INFORMATION FOR SEQ ID NO: 113

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113

ATTCCCCTGT CCCTCTCT

19

(115) INFORMATION FOR SEQ ID NO: 114

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double stranded

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114

18

CTGGAACTCT GGGGTTCT
(116) INFORMATION FOR SEQ ID NO: 115
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115

20

TGATTTTACA TCTAATGTC
(117) INFORMATION FOR SEQ ID NO: 116
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:
(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116

18

AGGAGAGAAT ATTGTGTC
(118) INFORMATION FOR SEQ ID NO: 117
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: genomic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE:
(A) ORGANISM: human
(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic
(viii) POSITION IN GENOME:
(A) CHROMOSOME/SEGMENT: 17
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117

18

TAGTCCTACT TTGACACT
(119) INFORMATION FOR SEQ ID NO: 118
(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118

20

AAATATTAA AATGTGCCAA
(120) INFORMATION FOR SEQ ID NO: 119
(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119

20

ATTCTCTGCT TGTGTTCTCT
(121) INFORMATION FOR SEQ ID NO: 120
(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: genomic DNA

(iii) HYPOTHETICAL: no

(iv) ANTI-SENSE: no

(vi) ORIGINAL SOURCE:

(A) ORGANISM: human

(vii) IMMEDIATE SOURCE:

(A) LIBRARY: genomic

(viii) POSITION IN GENOME:

(A) CHROMOSOME/SEGMENT: 17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120

20

ATTAGTAGC CAGGACAGTA
(122) INFORMATION FOR SEQ ID NO: 121

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE: Synthetic
(vii) IMMEDIATE SOURCE: Synthetic
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121

G

(123) INFORMATION FOR SEQ ID NO: 122

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 50 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double stranded
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: Synthetic DNA
(iii) HYPOTHETICAL: no
(iv) ANTI-SENSE: no
(vi) ORIGINAL SOURCE: Synthetic
(vii) IMMEDIATE SOURCE: Synthetic
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122
CGCCCGCCGC GCCCGCGCC CGGCCCGCCG CCCCCGCCCG AAATAATAAA

1

50



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Table 1

**PRIMER SEQUENCES AND TARGET FRAGMENT LENGTH FOR *hMLH1* LONG
MULTIPLEX PCR**

EXONS 1-4

hMLH1 1-4F - SEQ ID NO: 1
hMLH1 1-4R - SEQ ID NO: 2

TARGET FRAGMENT LENGTH: 10.8KB

EXONS 5-10

hMLH1 5-10F - SEQ ID NO: 3
hMLH1 5-10R - SEQ ID NO: 4

TARGET FRAGMENT LENGTH: 10.5KB

EXONS 11-13

hMLH1 11-13F - SEQ ID NO: 5
hMLH1 11-13R - SEQ ID NO: 6

TARGET FRAGMENT LENGTH: 8.7KB

EXONS 14-19

hMLH1 14-19F - SEQ ID NO: 7
hMLH1 14-19R - SEQ ID NO: 8

TARGET FRAGMENT LENGTH: 10.5KB

Table 2

**PRIMER SEQUENCES AND TARGET FRAGMENT LENGTH FOR *BRCA1* LONG MULTIPLEX
PCR**

EXONS 1-3

PRIMER SEQUENCES
BRCA1 1-3F - SEQ ID NO: 33
BRCA1 1-3R - SEQ ID NO: 34

TARGET FRAGMENT SIZE: 9.9KB

EXONS 5-9

PRIMER SEQUENCES
BRCA1 5-9F - SEQ ID NO: 35
BRCA1 5-9R - SEQ ID NO: 36

TARGET FRAGMENT SIZE: 9.7KB

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Table 2 Continued**EXONS 10-11**

PRIMER SEQUENCES

BRCA1 10-11F – SEQ ID NO: 37

BRCA1 10-11R – SEQ ID NO: 38

TARGET FRAGMENT SIZE: 4.8KB

EXONS 12-13

PRIMER SEQUENCES

BRCA1 12-13F – SEQ ID NO: 39

BRCA1 12-13R – SEQ ID NO: 40

TARGET FRAGMENT SIZE: 9.0KB

EXONS 14-17

PRIMER SEQUENCES

BRCA1 14-17F – SEQ ID NO: 41

BRCA1 14-17R – SEQ ID NO: 42

TARGET FRAGMENT SIZE: 10.7KB

EXONS 18-20

PRIMER SEQUENCES

BRCA1 18-20F – SEQ ID NO: 43

BRCA1 18-20R – SEQ ID NO: 44

TARGET FRAGMENT SIZE: 7.2KB

EXONS 21-24

PRIMER SEQUENCES

BRCA1 21-24F – SEQ ID NO: 45

BRCA1 21-24R – SEQ ID NO: 46

TARGET FRAGMENT SIZE: 11.4KB

Table 3

EXON.FRAGMENT	PRIMER SEQUENCES	CLAMPING SEQUENCE(S)	TARGET LENGTH	MELTING TEMP. (°C)
12.1	12.1F - SEQ ID NO: 9	SEQ ID NO: 29	184	44.53
	12.1R - SEQ ID NO: 10	NO CLAMP		
12.2	12.2F - SEQ ID NO: 11	SEQ ID NO: 30	366	53.23
	12.2R - SEQ ID NO: 12	SEQ ID NO: 29		
13	13F - SEQ ID NO: 13	SEQ ID NO: 29	272	49.06
	13R - SEQ ID NO: 14	NO CLAMP		
14	14F - SEQ ID NO: 15	SEQ ID NO: 28	235	48.94
	14R - SEQ ID NO: 16	SEQ ID NO: 31		
15	15F - SEQ ID NO: 17	SEQ ID NO: 29	179	29.97
	15R - SEQ ID NO: 18	NO CLAMP		
16	16F - SEQ ID NO: 19	NO CLAMP	261	47.56
	16R - SEQ ID NO: 20	SEQ ID NO: 29		
17	17F - SEQ ID NO: 21	SEQ ID NO: 29	199	47.01
	17R - SEQ ID NO: 22	NO CLAMP		
18	18F - SEQ ID NO: 23	SEQ ID NO: 28	215	46.67
	18R - SEQ ID NO: 24	NO CLAMP		
19.1	19.1F - SEQ ID NO: 25	NO CLAMP	282	43.43
	19.1R - SEQ ID NO: 26	SEQ ID NO: 29		

Table 4

EXON.FRAGMENT	PRIMER SEQUENCES	CLAMPING SEQUENCE(S)	TARGET LENGTH	MELTING TEMP. (°C)
2	2F - SEQ ID NO: 79	SEQ ID NO: 29	203	34.64
	2R - SEQ ID NO: 80	SEQ ID NO: 31		
3	3F - SEQ ID NO: 81	SEQ ID NO: 31	269	37.22
	3R - SEQ ID NO: 82	SEQ ID NO: 27		
5	5F - SEQ ID NO: 83	SEQ ID NO: 27	305	26.69
	5R - SEQ ID NO: 84	SEQ ID NO: 31		
6	6F - SEQ ID NO: 85	SEQ ID NO: 122	213	35.52
	6R - SEQ ID NO: 86	NO CLAMP		
7	7F - SEQ ID NO: 87	SEQ ID NO: 121	250	32.67
	7R - SEQ ID NO: 88	NO CLAMP		
8	8F - SEQ ID NO: 89	NO CLAMP	248	40.51
	8R - SEQ ID NO: 90	SEQ ID NO: 121		
9	9F - SEQ ID NO: 91	SEQ ID NO: 121	242	24.26
	9R - SEQ ID NO: 92	NO CLAMP		
10	10F - SEQ ID NO: 93	SEQ ID NO: 27	229	38.3
	10R - SEQ ID NO: 94	NO CLAMP		
11.1	11.1F - SEQ ID NO: 47	SEQ ID NO: 121	347	40.99
	11.1R - SEQ ID NO: 48	SEQ ID NO: 30		
11.2	11.2F - SEQ ID NO: 49	SEQ ID NO: 121	461	40.74
	11.2R - SEQ ID NO: 50	SEQ ID NO: 31		
11.3	11.3F - SEQ ID NO: 51	NO CLAMP	438	35.04
	11.3R - SEQ ID NO: 52	SEQ ID NO: 121		
11.4	11.4F - SEQ ID NO: 53	SEQ ID NO: 31	475	34.85
	11.4R - SEQ ID NO: 54	SEQ ID NO: 121		
11.5	11.5F - SEQ ID NO: 55	SEQ ID NO: 121	468	33.66
	11.5R - SEQ ID NO: 56	SEQ ID NO: 32		
11.6	11.6F - SEQ ID NO: 57	SEQ ID NO: 121	410	40.51
	11.6R - SEQ ID NO: 58	SEQ ID NO: 30		
11.7	11.7F - SEQ ID NO: 59	SEQ ID NO: 121	345	36.45
	11.7R - SEQ ID NO: 60	NO CLAMP		
11.8	11.8F - SEQ ID NO: 61	NO CLAMP	365	38.37
	11.8R - SEQ ID NO: 62	SEQ ID NO: 121		

Table 4 Continued ~2.

EXON.FRAGMENT	PRIMER SEQUENCES	CLAMPING SEQUENCE(S)	TARGET LENGTH	MELTING TEMP. (°C)
11.10	11.9 11.9F - SEQ ID NO: 63	SEQ ID NO: 30	422	40.4
	11.9R - SEQ ID NO: 64	SEQ ID NO: 27		
	11.10F - SEQ ID NO: 65	SEQ ID NO: 31	292	35.93
	11.10R - SEQ ID NO: 66	SEQ ID NO: 29		
11.11	11.11F - SEQ ID NO: 67	SEQ ID NO: 29	390	33.06
	11.11R - SEQ ID NO: 68	NO CLAMP		
11.12	11.12F - SEQ ID NO: 69	SEQ ID NO: 31	309	33.22
	11.12R - SEQ ID NO: 70	SEQ ID NO: 29		
11.13	11.13F - SEQ ID NO: 71	SEQ ID NO: 29	305	37.43
	11.13R - SEQ ID NO: 72	NO CLAMP		
11.14	11.14F - SEQ ID NO: 73	SEQ ID NO: 29	378	43.03
	11.14R - SEQ ID NO: 74	SEQ ID NO: 31		
11.15	11.15F - SEQ ID NO: 75	NO CLAMP	460	39.33
	11.15R - SEQ ID NO: 76	SEQ ID NO: 122		
11.16	11.16F - SEQ ID NO: 77	SEQ ID NO: 121	356	44
	11.16R - SEQ ID NO: 78	SEQ ID NO: 27		
12	12F - SEQ ID NO: 95	SEQ ID NO: 27	289	48.54
	12R - SEQ ID NO: 96	SEQ ID NO: 30		
13	13F - SEQ ID NO: 97	SEQ ID NO: 27	293	45.18
	13R - SEQ ID NO: 98	SEQ ID NO: 30		
14	14F - SEQ ID NO: 99	SEQ ID NO: 27	417	30.78
	14R - SEQ ID NO: 100	SEQ ID NO: 30		
15	15F - SEQ ID NO: 101	SEQ ID NO: 29	303	46.07
	15R - SEQ ID NO: 102	SEQ ID NO: 121		
16	16F - SEQ ID NO: 103	SEQ ID NO: 121	427	47.49
	16R - SEQ ID NO: 104	SEQ ID NO: 29		
17	17F - SEQ ID NO: 105	SEQ ID NO: 27	242	32.51
	17R - SEQ ID NO: 106	SEQ ID NO: 32		
18	18F - SEQ ID NO: 107	SEQ ID NO: 31	194	36.32
	18R - SEQ ID NO: 108	SEQ ID NO: 27		
19	19F - SEQ ID NO: 109	NO CLAMP	178	32.32
	19R - SEQ ID NO: 110	SEQ ID NO: 27		

Table 4 Continued ~ 3

EXON.FRAGMENT	PRIMER SEQUENCES	CLAMPING SEQUENCE(S)	TARGET LENGTH	MELTING TEMP. (°C)
20	20F - SEQ ID NO: 111 20R - SEQ ID NO: 112	SEQ ID NO: 27 NO CLAMP	219	46.4
21	21F - SEQ ID NO: 113 21R - SEQ ID NO: 114	SEQ ID NO: 122 NO CLAMP	172	49.95
22	22F - SEQ ID NO: 115 22R - SEQ ID NO: 116	SEQ ID NO: 27 SEQ ID NO: 30	209	47.71
23	23F - SEQ ID NO: 117 23R - SEQ ID NO: 118	SEQ ID NO: 31 SEQ ID NO: 27	275	49.47
24	24F - SEQ ID NO: 119 24R - SEQ ID NO: 120	SEQ ID NO: 122 SEQ ID NO: 121	325	59.79